

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of ~~simulation, wherein~~ simulating variations in ~~an electrical characteristic of a device constituting~~ first and second electrical characteristics of a semiconductor integrated circuit ~~are represented in the form of a corner model including at least one corner defining a limit of the variations, said method comprising the steps of,~~ the method comprising:

(a) forming a corner model including at least one corner defining predetermined limits of said variations of said first and second electrical characteristics;

[[ (a) ] (b) ~~preparing a predetermined value tolerable for the~~ assigning said variations in said ~~electrical characteristic~~ first and second electrical characteristics at said at least one corner as respective predetermined values;

[[ (b) ] (c) ~~performing a circuit simulation to determine a device parameter sensitivity which is the derivative of said electrical characteristic~~ respective device parameter sensitivities of said first and second electrical characteristics at said at least one corner, the device parameter sensitivities representing respective derivatives of said first and second electrical characteristics with respect to a device parameter ~~indicative of information about said device; and~~

[[ (c) ] (d) ~~applying said device parameter sensitivity~~ sensitivities and said predetermined value ~~of said electrical characteristic~~ to the normal equation of the least squares method, and solving the normal equation to determine variations in said device parameter at said at least one corner.

Claim 2 (Currently Amended): The method according to claim 1,

wherein said device parameter includes at least one of a model parameter regarding the shape of said semiconductor integrated circuit device and a process parameter regarding a condition during the steps of manufacturing said semiconductor integrated circuit.

Claim 3 (Currently Amended): The method according to claim 1, further comprising:  
~~the step of~~

~~(d)~~ (e) calculating the variations in said ~~electrical characteristic~~ first and second electrical characteristics at said at least one corner, based on ~~[[the]]~~ a multiplication of said device parameter ~~sensitivity~~ sensitivities provided in said step ~~[[ (b) ]]~~ (c) and the variations in said device parameter at said at least one corner provided in said step ~~[[ (c) ]]~~ (d).

Claim 4 (Currently Amended): The method according to claim 3,  
wherein a comparison is made between the variations in said ~~electrical characteristic~~ first and second electrical characteristics ~~at said at least one corner~~ calculated in said step ~~[[ (d) ]]~~ (e) and said predetermined ~~value~~ values prepared in said step ~~[[ (a) ]]~~ (b), and~~[[,]]~~

~~if an error of said electrical characteristic is~~ a difference between said variations and said predetermined values of said first and second electrical characteristics is greater than another predetermined a prescribed value, said steps ~~[[ (b) ]]~~ (c) through ~~[[ (d) ]]~~ (e) are executed again.

Claim 5 (Currently Amended): The method according to claim 3,  
wherein a comparison is made between the variations in said ~~electrical comparison~~ first and second electrical characteristics ~~at said at least one corner~~ calculated in said step (d) and said predetermined ~~value~~ values prepared in said step ~~[[ (a) ]]~~ (b), and~~[[,]]~~

if ~~an error of said electrical characteristic is~~ a difference between said variations and said predetermined values of said first and second electrical characteristics is greater than another predetermined a prescribed value, a new device parameter is introduced to execute said steps ~~[(b)] (c) through [(d)] (e) are repeated~~ using ~~[[said] a new device parameter and said device parameter in combination.~~

Claim 6 (Currently Amended): The method according to claim 1,  
wherein said device parameter includes a plurality of device parameters, and  
wherein said step ~~[(c)] (d)~~ is not executed upon at least one of said device parameters, but is instead executed upon only ~~[[the]] a~~ remainder of said plurality of device parameters.

Claim 7 (Currently Amended): The method according to claim 1,  
wherein said variations in said device parameters are determined using the weighted least squares method ~~in said step (e).~~

Claim 8 (Currently Amended): A device for simulation, ~~said device using a method of simulation as recited in claim 1 to represent the variations in said electrical characteristic of said device in the form of said corner model,~~ simulating variations in first and second electrical characteristics of a semiconductor integrated circuit by (a) forming a corner model including at least one corner defining predetermined limits of said variations of said first and second electrical characteristics, (b) assigning said variations in said first and second electrical characteristics at said at least one corner, as respective predetermined values, (c) performing a circuit simulation to determine respective device parameter sensitivities of said first and second electrical characteristics at said at said at least one corner, the respective

device parameter sensitivities representing respective derivatives of said first and second electrical characteristics with respect to a device parameter, and (d) applying said device parameter sensitivities and said predetermined values to the normal equation of the least squares method, and solving the normal equation to determine variations in said device parameter at said at least one corner, said device comprising:

a data input unit configured to input means for inputting said predetermined value tolerable for the variations in said electrical characteristic values;

data output means;

a simulator for simulating the amount of change in said electrical characteristic as would occur configured to simulate the variations in said first and second electrical characteristics, when said device parameter is changed, in order to determine said device parameter sensitivity sensitivities; and

a data processing unit configured to apply means for applying said device parameter sensitivity sensitivities determined by said simulator and said predetermined value of said electrical characteristic values inputted to said data input means to the normal unit to the normal equation of the least squares method, to determine variations in said device parameter at said at least one corner, thereby outputting and to output the variations in said device parameter at said at least one corner to said data output means.

Claim 9 (Currently Amended): The device according to claim 8, further comprising:

a data storage section for storing therein configured to store data about said device parameter sensitivity sensitivities and data about [[the]] said variations in said device parameter.

Claim 10 (New): A device for simulating variations in first and second electrical characteristics of a semiconductor integrated circuit by (a) forming a corner model including at least one corner defining predetermined limits of said variations of said first and second electrical characteristics, (b) assigning said variations in said first and second electrical characteristics at said at least one corner, as respective predetermined values, (c) performing a circuit simulation to determine respective device parameter sensitivities of said first and second electrical characteristics at said at said at least one corner, the respective device parameter sensitivities representing respective derivatives of said first and second electrical characteristics with respect to a device parameter, and (d) applying said device parameter sensitivities and said predetermined values to a normal equation of the least squares method, and solving the normal equation to determine variations in said device parameter at said at least one corner, said device comprising:

a data input unit configured to input said predetermined values;

a simulator configured to simulate the variations in said first and second electrical characteristics, when said device parameter is changed, in order to determine said device parameter sensitivities; and

data processing means for applying said device parameter sensitivities determined by said simulator and said predetermined values inputted to said data input unit to the normal equation of the least squares method, for determining variations in said device parameter at said at least one corner, and for outputting the variations in said device parameter at said at least one corner.

Claim 11 (New): The device according to claim 10, further comprising:

a data storage section configured to store data about said device parameter sensitivities and data about said variations in said device parameter.